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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,205	12/07/2001	Philip P. Carvey	2390.1006-009	9706

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EXAMINER	
LEE, ANDREW CHUNG CHEUNG	

ART UNIT	PAPER NUMBER
2419	

MAIL DATE	DELIVERY MODE
08/11/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/021,205	CARVEY ET AL.	
	Examiner	Art Unit	
	Andrew C. Lee	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5,7 and 10* is/are pending in the application.

4a) Of the above claim(s) *2,4,6,8,9 and 11-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5,7 and 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/30/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 1, 3, 5, 7, 10 are pending.

Claims 2, 4, 6, 8 – 9, 11 – 14 had been canceled.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 4/30/2009 was filed, and the submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 5, are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (US 20040037278 B1) in view of Chevalier et al. (US 6262974 B1).

Regarding claim 1, Wong et al. disclose a network router *(Fig. 1, element 10, packet switch as network router; para. [0012])* comprising: a plurality of trunk ports, including a composite port of plural ports to plurality trunks which serve as a composite trunk to a common destination *("at least one trunk formed by a plurality of aggregated network links; para. [0012],[0013]);* a routing fabric for transfer of data packets between

trunk ports *("switching fabric" as routing fabric; Fig. 2, element 10 switch fabric, para. [0044])* and an output port selector *("a network output port arbitration sub-system" as an output port selector; para. [0052], Fig. 3A)* which selects an output port for a packet from a composite port, the output port selector balancing load across the trunks of a composite trunk according to adjustable weighting *("a network output port arbitration sub-system" as an output port selector; para. [0052], Fig. 3A)* selects an output port for a packet from a composite port, the output port selector balancing load across the trunks of a composite trunk according to adjustable weighting *(Fig. 2, element 168, para. [0044], [0048]; [0052]; "the loading of each of the network links of each of the trunked links is proportional to the number of packets transmitted to the particular link, and is determined in accordance with the type of load balancing scheme" as adjustable weighting; para. [0040]).*

Wong et al. discloses implicitly dynamically adjustable *weighting ("implemented a dynamic trunked port mapping" correlates to dynamically adjustable weighting; para. [0040], [0042]).* Wong et al. do not disclose explicitly dynamically adjustable weighting, and the load approaching balance across the trunks.

Chevalier et al. in the same field of endeavor teach dynamically adjustable weighting ("dynamically adjusting the bandwidth of an already established connection with improved fairness"; col. 1, lines 11 - 16, col. 2, lines 37 - 39), and the load approaching balance across the trunks *("loading balancing for fairly distributing the traffic over all the links"; col. 2, lines 37 – 39).*

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wong et al. to include dynamically adjustable weighting and the load approaching balance across the trunks as taught by Chevalier et al. in order to provide fairness in network connection bandwidth assignment at both the connection set-up level and by varying bandwidth dynamically assigned to already established connections without breaking established connections of lower connecting priority levels *(as suggested by Chevalier et al. , see col. 4, lines 38 – 42).*

Regarding claim 5, Wong et al. disclose a method of routing packets in a network *("a local area network switch including a plurality of network ports for transmitting and receiving packets to and from network nodes via network links"; para. [0012])* comprising: identifying a destination of the packets *("the packet having a source value and a destination address value indicating a destination node"; para. [0013]);* selecting one of plurality trunks forming a composite trunk to the destination, the trunk being selected with adjustable weighting to balance load across the trunk of a composite trunk; forwarding the packets toward the destination on the selected trunk *("a third packet is received from the high speed server at port B_4, the packet routing unit generates a destination port ID value indicating trunked port P_6 as the destination trunked port associated with the third packet, and the load balancing unit selects a destination port from ports $D_4 – D_7$ of the trunked destination port P6"; para. [0039]); also "the loading of each of the network links of each of the trunked links is proportional to the number of packets transmitted to the particular link, and is determined in accordance with the type of load balancing scheme" as adjustable weighting; paras.*

[0040], [0042]). Wong et al. also disclose implicitly dynamically adjustable to balance load across the trunks of a composite trunk *("dynamic trunked port mapping scheme" correlates to dynamically adjustable to balance load across the trunks of a composite trunk; para. [0042]).*

Wong et al. do not disclose explicitly dynamically adjustable weighting to balance load across the trunks of a composite trunk, the load approaching balance across the trunks.

Chevalier et al. in the same field of endeavor teach dynamically adjustable weighting to balance load across the trunks of a composite trunk ("dynamically adjusting the bandwidth of an already established connection with improved fairness"; col. 1, lines 11 - 16, col. 2, lines 37 - 39), the load approaching balance across the trunks *("loading balancing for fairly distributing the traffic over all the links"; col. 2, lines 37 – 39).*

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wong et al. to include dynamically adjustable weighting to balance load across the trunks of a composite trunk, the load approaching balance across the trunks such as that taught by Chevalier et al. in order to provide fairness in network connection bandwidth assignment at both the connection set-up level and by varying bandwidth dynamically assigned to already established connections without breaking established connections of lower connecting priority levels *(as suggested by Chevalier et al. , see col. 4, lines 38 – 42).*

5. Claims 3, 7, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al. (US 20040037278 B1), and Fenner (5095480) in view of Chevalier et al. (US 6262974 B1).

Regarding claim 3, Wong et al. disclose the limitation of a network router router *(Fig. 1, element 10, packet switch as network router; para. [0012]* comprising: a plurality of trunk ports, including a composite port of plural ports to plural trunks which serve as a composite trunk to a common destination *("at least one trunk formed by a plurality of aggregated network links; para. [0012],[0013]);* a routing fabric for transfer of data packets between trunk ports *("switching fabric" as routing fabric; Fig. 2, element 10 switch fabric, para. [0044])*; and an output port selector *("a network output port arbitration sub-system" as an output port selector; para. [0052], Fig. 3A)* which selects an output port for a packet from a composite port according to a table, the table routes being adjustable *(paras. [0041], [0042],"a network output port arbitration sub-system" as an output port selector; para. [0052], Fig. 3A)*, selects an output port for a packet from a composite port according to a table, the table routes being adjustable *(Fig. 2, element 168, para. [0044], [0048]; [0052]; "the loading of each of the network links of each of the trunked links is proportional to the number of packets transmitted to the particular link, and is determined in accordance with the type of load balancing scheme" as adjustable weighting; paras. [0040]-[0042]).*

Wong et al. disclose implicitly wherein the table is dynamically adjustable to balance load across the trunks of a composite trunk *weighting ("implemented a dynamic trunked port mapping" correlates to dynamically adjustable weighting; para.*

[0040], [0042]). Wong et al. do not disclose explicitly the table routes being dynamically adjustable.

Fenner in the same field of endeavor teaches the table routes being dynamically adjustable *("dynamic hashing and memory allocation techniques automatically adjust the size of the routing table" as the table routes being dynamically adjustable; column 4, lines 60 – 65).* It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wong et al. to include the table routes being dynamically adjustable such as that taught by Fenner in order to provide a selection of approaches to allow graceful degradation of the routing efficiency when the memory available for routing tables is full, *as suggested by Fenner, see col.4, lines 65 – 68.*

Neither Wong et al. nor Fenner disclose explicitly routes being dynamically adjustable for a load to approach balance the trunks.

Chevalier et al. in the same field of endeavor teach routes being dynamically adjustable for a load to approach balance the trunks "dynamically adjusting the bandwidth of an already established connection with improved fairness"; col. 1, lines 11 - 16, col. 2, lines 37 – 39 ,*"loading balancing for fairly distributing the traffic over all the links"; col. 2, lines 37 – 39).*

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wong et al. to include routes being dynamically adjustable for a load to approach balance the trunks as taught by Chevalier et al. in order to provide fairness in network connection bandwidth assignment at both the connection set-up level and by varying bandwidth dynamically assigned to already

established connections without breaking established connections of lower connecting priority levels *(as suggested by Chevalier et al. , see col. 4, lines 38 – 42).*

Regarding claim 7, Wong et al. disclose a method of routing packets in a network *("a local area network switch including a plurality of network ports for transmitting and receiving packets to and from network nodes via network links"; para. [0012])* comprising: identifying a destination of the packets *("the packet having a source value and a destination address value indicating a destination node"; para. [0013]);* selecting one of plural trunks forming a composite trunk to the destination, the trunk being selected according to a table, the table routes being adjustable; and forwarding the packets toward the destination on the selected trunk *("a third packet is received from the high speed server at port B_4, the packet routing unit generates a destination port ID value indicating trunked port P_6 as the destination trunked port associated with the third packet, and the load balancing unit selects a destination port from ports $D_4 – D_7$ of the trunked destination port P6"; para. [0039]); also "the loading of each of the network links of each of the trunked links is proportional to the number of packets transmitted to the particular link, and is determined in accordance with the type of load balancing scheme" as adjustable weighting; paras. [0040], [0042]).*

Wong et al. disclose implicitly wherein the table is dynamically adjustable to balance load across the trunks of a composite trunk *weighting ("implemented a dynamic trunked port mapping" correlates to dynamically adjustable weighting; para. [0040], [0042])*. Wong et al. do not disclose explicitly the table routes being dynamically adjustable.

Fenner in the same field of endeavor teaches the table routes being dynamically adjustable *("dynamic hashing and memory allocation techniques automatically adjust the size of the routing table" as the table routes being dynamically adjustable; column 4, lines 60 – 65).* It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wong et al. to include the table routes being dynamically adjustable such as that taught by Fenner in order to provide a selection of approaches to allow graceful degradation of the routing efficiency when the memory available for routing tables is full, *as suggested by Fenner, see col.4, lines 65 – 68.*

Neither Wong et al. nor Fenner disclose explicitly routes being dynamically adjustable for a load to approach balance the trunks.

Chevalier et al. in the same field of endeavor teach routes being dynamically adjustable for a load to approach balance the trunks "dynamically adjusting the bandwidth of an already established connection with improved fairness"; col. 1, lines 11 - 16, col. 2, lines 37 – 39 ,*"loading balancing for fairly distributing the traffic over all the links"; col. 2, lines 37 – 39).*

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wong et al. to include routes being dynamically adjustable for a load to approach balance the trunks as taught by Chevalier et al. in order to provide fairness in network connection bandwidth assignment at both the connection set-up level and by varying bandwidth dynamically assigned to already established connections without breaking established connections of lower connecting priority levels *(as suggested by Chevalier et al. , see col. 4, lines 38 – 42).*

Regarding claim 10, Wong et al. disclose the limitation of a method of routing packets in a network *("a local area network switch including a plurality of network ports for transmitting and receiving packets to and from network nodes via network links"; para. [0012]).* Wong et al. also teach network is Ethernet and route packet through Ethernet.

Wong et al. do not disclose explicitly claimed wherein the network is the Internet and the packets are routed under an Internet protocol.

Fenner in the same field of endeavor teaches claimed wherein the network is the Internet and the packets are routed under an Internet protocol *("Internet router learns the location of these numbers within the network from the Internet protocol traffic"; col. 5, lines 28 – 31, lines 41 – 50).* It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wong et al. to include a method as claimed wherein the network is the Internet and the packets are routed under an Internet protocol such as that taught by such as that such as that taught by Fenner in order to provide a selection of approaches to allow graceful degradation of the routing efficiency when the memory available for routing tables is full, *as suggested by Fenner, see column 4, lines 65 – 68.*

Response to Arguments

6. Applicant's arguments filed on 4/30/2009 with respect to claims 1, 3, 5, 7, 10 have been fully considered but they are not persuasive.

Regarding claims 1 and 5, applicant argues as neither Wong nor Chevalier discloses dynamically adjustable weighting, much less balancing loads with dynamically

adjustable weighting, combining Wong and Chevalier does not yield the network router recited in Claim 1. Similarly, combining Wong and Chevalier does not result in the method of Claim 5 because neither Wong nor Chang disclose "selecting one of plural trunks ... with dynamically adjustable weighting," as recited in Claim 5.

In response to the applicant's remark/argument, examiner respectfully disagrees.

Examiner contends the combined system of references Wong and Chevalier teaches the claimed subject matter of "balancing load across the trunks of the composite trunk according to dynamically adjustable weighting, the load approaching balance across the trunks"

Examiner interpreted dynamically adjustable to balance load across the trunks of a composite trunk, implicitly as "dynamic trunked port mapping scheme; see Wong et al., para. [0042], while "dynamically adjustable weighting to balance load across the trunks of a composite trunk" is interpreted as "dynamically adjusting the bandwidth of an already established connection with improved fairness"; see Chevalier et al., col. 1, lines 11 - 16, col. 2, lines 37 - 39, "the load approaching balance across the trunks' is interpreted as "loading balancing for fairly distributing the traffic over all the links"; see Chevalier et al., col. 2, lines 37 – 39.

Regarding claims 3 and 7, applicant then argues Fenner does not disclose dynamically adjusting table routes. As discussed above, neither Wong nor Chevalier explicitly disclose dynamically adjusting table routes either. Therefore, combining Wong, Fenner, and Chevalier does not yield a system that with "table routes being dynamically adjustable for a load to approach balance across the trunks," as recited in claims 3, and 7.

In response to the applicant's remark/argument, examiner respectfully disagrees.

Examiner contends the combined system of references Wong and Chevalier and Fenner teaches the claimed subject matter of "dynamically adjusting table routes."

Examiner interpreted "dynamically adjusting table routes" as "dynamic hashing and memory allocation techniques automatically adjust the size of the routing table" see Fenner, col.4, lines 60 – 65.

Regarding claim 10, the claim is dependent upon Claim 5, since claim 5 is rejected under 35 U.S.C. 103 (a), hence claim 10 is also is rejected under 35 U.S.C. 103 (a).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571)272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew C Lee/
Examiner, Art Unit 2419
<8/09/2009:4Qy09>
/Ayaz R. Sheikh/
Supervisory Patent Examiner, Art Unit 2419